

CLAIMS

1. A shaped expanded graphite article having, at least in its outer layer portion, an oxidation-resistant coating layer.
- 5 2. The shaped expanded graphite article according to Claim 1, wherein the oxidation-resistant coating layer contains a boron element and a phosphorus element.
3. The shaped expanded graphite article according to Claim 2, wherein a content of the boron element in the oxidation-resistant coating layer is 1 mass% or more.
4. The shaped expanded graphite article according to Claim 2, wherein a content
10 of the phosphorus element in the oxidation-resistant coating layer is 0.1 mass% or more.
5. The shaped expanded graphite article according to Claim 2, wherein the oxidation-resistant coating layer has a thickness of 0.5 μm or more.
6. The shaped expanded graphite article according to Claim 3, wherein the boron
15 element contained in the oxidation-resistant coating layer is contained in one material or a combination of two or more materials selected from a group consisting of: simple boron; boron carbide; boron chloride; boron fluoride; boron bromide; boron iodide; boron nitride; boron oxide; boron silicide; an organic boron compound; and a compound containing boron and phosphorus.
- 20 7. The shaped expanded graphite article according to Claim 6, wherein the material that contains the boron element has an average particle diameter of 200 μm or less.
8. The shaped expanded graphite article according to Claim 4, wherein the phosphorus element contained in the oxidation-resistant coating layer is contained in
25 one material or a combination of two or more materials selected from a group

consisting of: simple phosphorus; phosphorus oxide; phosphorus carbide; phosphorus chloride; phosphorus fluoride; phosphorus bromide; phosphorus hydroxide; phosphorus nitride; phosphorus silicide; an organic phosphorous compound; and a compound containing phosphorus and boron.

5 9. The shaped expanded graphite article according to Claim 5, wherein a shaped expanded graphite article is a sheet shape.

10. A method for producing a shaped expanded graphite article, wherein a shaped expanded graphite article is contacted with a solution containing a phosphorus element and a boron element, and then subjected to a heat treatment.

10 11. The method for producing a shaped expanded graphite article according to Claim 10, wherein a material containing a boron element is one material or a combination of two or more materials selected from a group consisting of: simple boron; boron carbide; boron chloride; boron fluoride; boron bromide; boron iodide; boron nitride; boron oxide; boron silicide; an organic boron compound; and a
15 compound containing boron and phosphorus.

12. The method for producing a shaped expanded graphite article according to Claim 11, wherein the material containing a boron element has an average particle diameter of 200 μm or less.

13. The method for producing a shaped expanded graphite article according to
20 Claim 10, wherein a material containing a phosphorus element is one material or a combination of two or more materials selected from a group consisting of: simple phosphorus; phosphorus oxide; phosphorus carbide; phosphorus chloride; phosphorus fluoride; phosphorus bromide; phosphorus hydroxide; phosphorus nitride; phosphorus silicide; an organic phosphorous compound; and a compound containing phosphorus
25 and boron.

14. The method for producing a shaped expanded graphite article according to Claim 10, wherein the heat treatment is performed at 200 degrees C or higher.

15. A method for producing a shaped expanded graphite article wherein graphite as a material is contacted with a solution containing a phosphorus element and a boron element, and then subjected to an expanding treatment followed by a shaping.

16. The method for producing an oxidation-resistant shaped expanded graphite article according to Claim 15, wherein a material containing a boron element is one material or a combination of two or more materials selected from a group consisting of: simple boron; boron carbide; boron chloride; boron fluoride; boron bromide; boron iodide; boron nitride; boron oxide; boron silicide; an organic boron compound; and a compound containing boron and phosphorus.

17. The method for producing a shaped expanded graphite article according to Claim 16, wherein the material containing a boron element has an average particle diameter of 200 μm or less.

18. The method for producing a shaped expanded graphite article according to Claim 15, wherein a material containing a phosphorus element is one material or a combination of two or more materials selected from a group consisting of: simple phosphorus; phosphorus oxide; phosphorus carbide; phosphorus chloride; phosphorus fluoride; phosphorus bromide; phosphorus hydroxide; phosphorus nitride; phosphorus silicide; an organic phosphorous compound; and a compound containing phosphorus and boron.